WHAT IS CLAIMED IS:

1. A thin film transistor wherein a gate electrode and a semiconductor active film are formed on a substrate with a gate insulating film, which is formed of two layered insulating films, located therebetween, said gate insulating film being made up of a first gate insulating film which is disposed on the same side as said gate electrode and improves a withstand voltage between said gate electrode and said semiconductor active film, and a second gate insulating film which is disposed on the same side as said semiconductor active film and improves an interface characteristic between said gate insulating film and said semiconductor active film.

2. A thin film transistor according to Claim 1, wherein said first and second gate insulating films are each formed of a silicon nitride film, the optical band gap of said first gate insulating film has a value in the range of 3.0 to 4.5 eV, and the optical band gap of said second gate insulating film has a value in the range of 5.0 to 5.3 eV.

3. A method of producing a thin film transistor according to Claim 1, said method comprises the steps of preparing a plasma CVD apparatus including a radio-frequency

electrode and a susceptor electrode disposed in opposed relation and installed in a film forming chamber; bringing a gas mixture of silane gas and ammonia gas into a plasma state under a desired radio-frequency electric field formed between said radio-frequency electrode and said susceptor electrode, thereby forming a first gate insulating film on a gate electrode formed on a substrate; bringing a gas mixture having the same composition as said gas mixture into a plasma state under a greater radio-frequency electric field than said radio-frequency electric field, thereby forming a second gate insulating film on said first gate insulating film; and forming a semiconductor active film on said second gate insulating film.

4. A method of producing a thin film transistor according to Claim 1, said method comprising the steps of preparing a plasma CVD apparatus including a radio-frequency electrode and a susceptor electrode disposed in opposed relation and installed in a film forming chamber; bringing a gas mixture of silane gas and ammonia gas into a plasma state under a desired radio-frequency electric field formed between said radio-frequency electrode and said susceptor electrode, thereby forming a first gate insulating film on a gate electrode formed on a substrate; bringing a gas mixture, in which silane gas and ammonia gas are mixed at such a

mixing ratio as containing the ammonia gas at a greater proportion relative to the silane gas than in said mixture gas, into a plasma state under a radio-frequency electric field having the same intensity as said radio-frequency electric field, thereby forming a second gate insulating film on said first gate insulating film; and forming a semiconductor active film on said second gate insulating film.

5. A liquid crystal display wherein a liquid crystal is held between a pair of substrates disposed in opposed relation, and one of said pair of substrates includes a thin film transistor according to Claim 1.

6. A thin film forming apparatus comprising a susceptor electrode disposed in opposed relation to a radio-frequency electrode and installed in a film forming chamber for supporting a substrate thereon, and a control unit for successively carrying out the steps of supplying a reactive gas to an inner space of said film forming chamber while exhausting the gas so as to maintain a desired pressure within said film forming chamber, and bringing said reactive gas into a plasma state under a first radio-frequency electric field formed between said radio-frequency electrode and said susceptor electrode, thereby forming a first

coating on said substrate; and bringing said reactive gas into a plasma state under a greater second radio-frequency electric field than said first radio-frequency electric field while maintaining the plasma state between said radio-frequency electrode and said susceptor electrode, thereby forming a second coating on the surface of said first coating.

7. A thin film forming apparatus according to Claim 6, wherein desired plasma excitation power is applied to said radio-frequency electrode, and said second radio-frequency electric field is made greater than said first radio-frequency electric field by setting second substrate bias power applied to said susceptor electrode in forming said second coating to be greater than first substrate bias power applied to said susceptor electrode in forming said first coating.

8. A thin film forming apparatus according to Claim 6, wherein said second radio-frequency electric field is made greater than said first radio-frequency electric field by setting second plasma excitation power applied to said radio-frequency electrode in forming said second coating to be greater than first plasma excitation power applied to said radio-frequency electrode in forming said first coating.

9. A thin film forming apparatus comprising a susceptor electrode disposed in opposed relation to a radio-frequency electrode and installed in a film forming chamber for supporting a substrate thereon, and a control unit for successively carrying out the steps of supplying a first gas mixture of monosilane gas and ammonia gas, which are mixed at a first mixing ratio, to an inner space of said film forming chamber while exhausting the gas so as to maintain a desired pressure within said film forming chamber; bringing said first gas mixture into a plasma state under a radio-frequency electric field formed between said radio-frequency electrode and said susceptor electrode, thereby forming a first silicon nitride film on said substrate; and supplying a second gas mixture of monosilane gas and ammonia gas, which are mixed at such a second mixing ratio as containing the ammonia gas at a greater proportion than at said first mixing ratio, to the inner space of said film forming chamber while maintaining the plasma state between said radio-frequency electrode and said susceptor electrode, and bringing said second gas mixture into a plasma state to thereby form a second silicon nitride film on the surface of said first silicon nitride film.